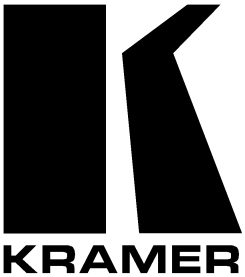
Kramer Electronics, Ltd.



USER MANUAL

Model:

VP-200NA

1:2 XGA / Audio DA

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1 Introduction

Welcome to Kramer Electronics (since 1981): a world of unique, creative and affordable solutions to the infinite range of problems that confront the video, audio and presentation professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 500-plus different models now appear in 8 Groups[1], which are clearly defined by function.

Congratulations on purchasing your Kramer TOOLS **VP-200NA** *1:2 XGA / Audio DA* which is ideal for:

- Multi monitor applications or presentation systems requiring local monitors and large screen display devices such as a projector
- Rental and staging systems
- Schools, churches, corporate applications

The package includes the following items:

- **VP-200NA** 1:2 XGA / Audio DA
- Power adapter (12V DC Input)
- This user manual[2]

2 Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high performance high resolution cables[3]

2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps.

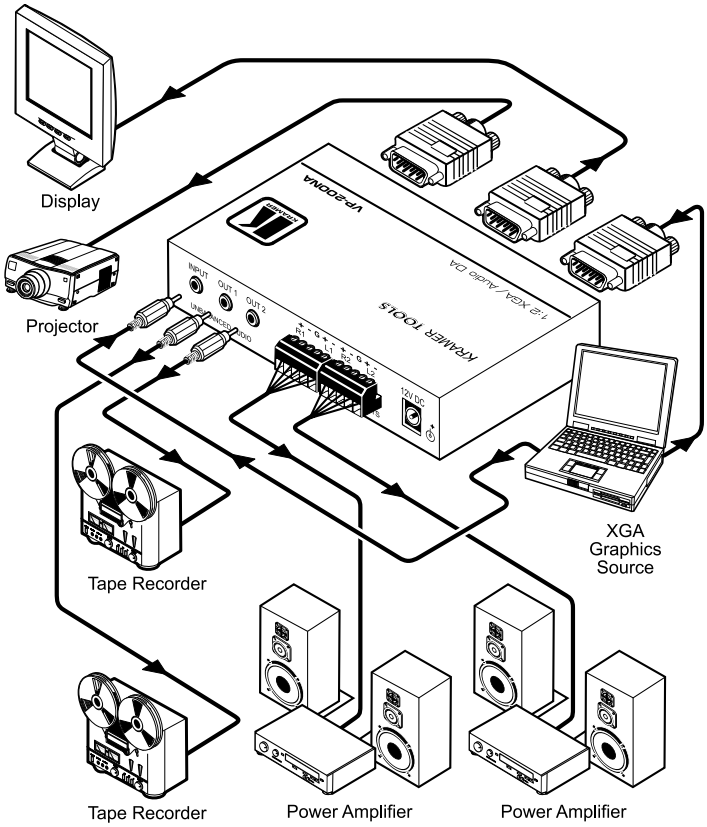
1 GROUP 1: Distribution Amplifiers; GROUP 2: Video and Audio Switchers, Matrix Switchers and Controllers; GROUP 3: Video, Audio, VGA/XGA Processors; GROUP 4: Interfaces and Sync Processors; GROUP 5: Twisted Pair Interfaces; GROUP 6: Accessories and Rack Adapters; GROUP 7: Scan Converters and Scalers; and GROUP 8: Cables and Connectors

2 Download up-to-date Kramer user manuals from our Web site at http://www.kramerelectronics.com

3 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com

Step 1: Connect the inputs/outputs - see section 5

You can connect the VP-200NA to output the XGA and audio signals from a laptop to 2 video acceptors (for example, a display and a projector) and 4 audio acceptors (for example, 2 tape recorders and 2 power amplifiers):



Step 2: Connect the power

If required:

- Adjust the XGA EQ. and Audio Level
- Set the Hs and Vs switches to Hi-Z (TTL)
- Slide the ID BIT switch to ON

3 Overview

The Kramer high performance **VP-200NA** *1:2 XGA / Audio DA* is a 1:2 distribution amplifier for VGA/SVGA/XGA/UXGA balanced and unbalanced stereo audio signals.

The **VP-200NA** *1:2 XGA / Audio DA*:

- Accepts an XGA input, provides correct buffering and isolation, and then distributes the signal to 2 identical outputs on high-density 15 pin HD connectors
- Accepts an unbalanced stereo audio input, and simultaneously outputs 2 unbalanced stereo audio outputs on mini plug connectors, and 2 balanced stereo audio outputs on terminal block connectors
- With its video bandwidth exceeding 400MHz, ensures transparent operation at the highest resolutions
- Accepts analog or digital syncs[1] and provides ID Bit control[2] as well as separate controls for audio output level and XGA equalization

Achieving the best performance means:

- Connecting only good quality connection cables, thus avoiding interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables)
- Avoiding interference from neighboring electrical appliances and positioning your **VP-200NA** away from moisture, excessive sunlight and dust

Caution – No operator-serviceable parts inside unit.

Warning – Use only the Kramer Electronics input power wall adapter that is provided with this unit[3].

Warning – Disconnect power and unplug unit from wall before installing or removing device or servicing unit.

1 Via a pair of underside switches. Note that both the Hs (horizontal sync) switch and the Vs (vertical sync) switch MUST be set identically

2 Via an underside switch. Sometimes notebook computers refuse to output a VGA signal to an external VGA monitor. By setting the ID BIT to ON, the notebook will output to an external VGA monitor

3 For example: model number AD2512C, part number 2535-000251

4 Your VP-200NA 1:2 XGA / Audio DA

Sections 4.1 and 4.2 describe the top and the underside of the **VP-200NA** *1:2 XGA / Audio DA*, respectively.

4.1 Your VP-200NA 1:2 XGA / Audio DA (Top)

Figure 1 and Table 1 define the top of the **VP-200NA**:

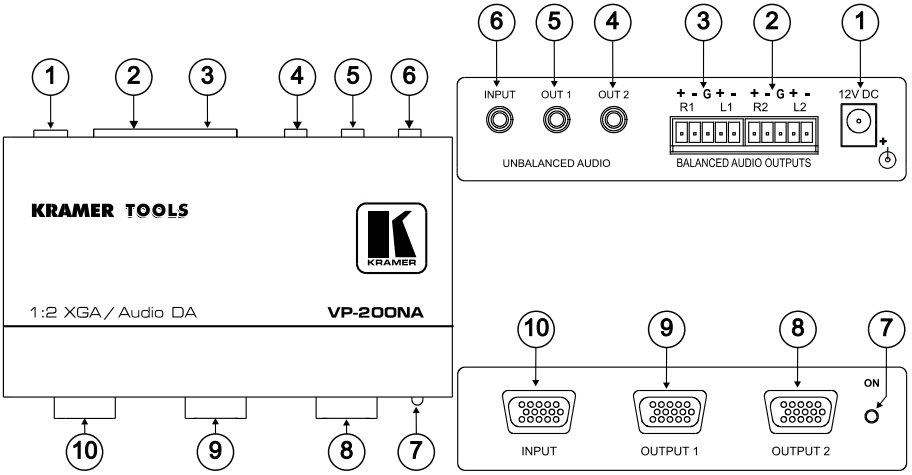


Figure 1: VP-200NA 1:2 XGA / Audio DA Top

Table 1: Features and Functions of the VP-200NA 1:2 XGA / Audio DA Top

#	Feature		Function
1	*12V DC*		+12V DC connector for powering the unit
2	*Balanced Audio Outputs*	*2* Terminal Block	Connects balanced stereo audio to the audio acceptor 2
3		*1* Terminal Block	Connects balanced stereo audio to the audio acceptor 1
4	*Unbalanced Audio* Mini plug Connector	*OUT 2* Mini plug	Connects unbalanced stereo audio to the audio acceptor 2
5		*OUT 1* Mini plug	Connects unbalanced stereo audio to the audio acceptor 1
6		*INPUT* Mini plug	Connects audio to the audio source
7	*ON* LED		Illuminates when receiving power
8	*OUTPUT 2* HD15F Connector		Connect to the XGA acceptor 2
9	*OUTPUT 1* HD15F Connector		Connect to the XGA acceptor 1
10	*INPUT* HD15F Connector		Connect to the XGA source

4.2 Your VP-200NA 1:2 XGA / Audio DA (Underside)

Figure 2 and Table 2 define the controls on the underside of the **VP-200NA**:

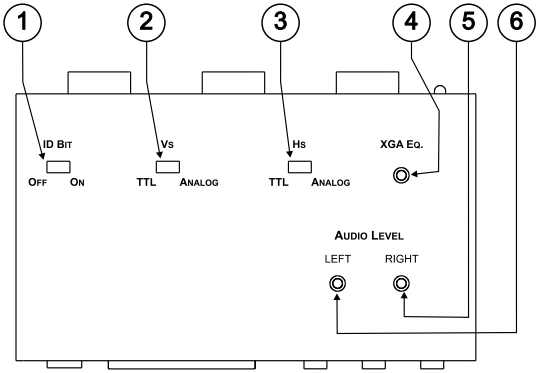


Figure 2: VP-200NA 1:2 XGA / Audio DA Underside

Table 2: Features and Functions of the VP-200NA 1:2 XGA / Audio DA Underside

#	Feature	Function
1	*ID BIT* Switch	Slide to the right to set to ON[1]; to the left to set to OFF
2	Vs (Vertical Sync) Switch	Set both switches[2] to Hi-Z (TTL[3]) if the source is, for example, a digital graphics card. Set both switches to 75Ω (ANALOG) if the source is analog based, for example, an RGBHV source with coaxial cable for sync
3	Hs (Horizontal Sync) Switch	
4	*XGA EQ.*	Adjusts[4] the XGA EQ. (equalization) compensation
5	*AUDIO LEVEL RIGHT* Trimmer	Adjusts[4] the right output signal level
6	*AUDIO LEVEL LEFT* Trimmer	Adjusts[4] the left output signal level

1 Enabling the notebook or laptop to output a VGA signal to an external VGA monitor

2 Both the Hs and the Vs switches MUST be set identically (no harm will occur to the graphics source if the switches are set to the wrong direction)

3 "Transistor-Transistor Logic" is a digital electronics logic family, with defined parameters of the logic levels. When complying to this standard, there is no need for interfacing circuitry

4 Insert a screwdriver into the small hole and carefully rotate it, trimming the level

5 Using Your VP-200NA 1:2 XGA / Audio DA

You can use the **VP-200NA** *1:2 XGA / Audio DA* to output the XGA signal from a laptop (see section 5.1) or a PC (see section 5.2).

5.1 Connecting a Laptop to the VP-200NA 1:2 XGA / Audio DA

The example in Figure 3 illustrates how to use the **VP-200NA** to output the XGA and audio signals from a laptop's digital graphics card to two video and four audio acceptors:

1. Connect a XGA source (for example, a laptop's digital graphics card) to the INPUT HD15F connector, and connect the sound to the Unbalanced Audio INPUT mini plug connector.
2. Connect the OUTPUT HD15F connectors to up to 2 XGA acceptors[1], as follows:
   - Connect the OUTPUT 1 connector to a monitor
   - Connect the OUTPUT 2 connector to a projector
3. Connect the Unbalanced Audio OUTPUT mini plug connectors to up to 2 unbalanced audio acceptors[1], as follows:
   - Connect the OUT 1 connector to Tape Recorder 1
   - Connect the OUT 2 connector to Tape Recorder 2
4. Connect the Balanced Audio OUTPUT terminal block connectors to up to 2 balanced audio acceptors[1], as follows:
   - Connect the first terminal block connector to Power Amplifier 1
   - Connect the second terminal block connector to Power Amplifier 2
5. On the underside of the **VP-200NA**:
   - Set both the Hs and Vs switches to Hi-Z (TTL)
   - Slide the ID Bit switch to the left to set to ON
6. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.
7. Adjust[2] the right and left audio signal levels, if required (not illustrated in Figure 3[3]).

1 When only one output is required, use either of the outputs, and leave the other output unconnected

2 Insert a screwdriver into the small hole and carefully rotate it, trimming the OUTPUT level

3 See the illustration in Figure 2

5.2 Connecting a PC to the VP-200NA 1:2 XGA / Audio DA

The example in Figure 4 illustrates how to use the **VP-200NA** to output the XGA and audio signals from a PC's digital graphics card to two video and four audio acceptors:

1. Connect an XGA source (for example, a PC's digital graphics card) to the INPUT HD15F connector, and connect the sound to the Unbalanced Audio INPUT mini plug connector.
2. Connect the OUTPUT HD15F connectors to up to 2 XGA acceptors[1], as follows:
   - Connect the OUTPUT 1 connector to Analog Monitor 1
   - Connect the OUTPUT 2 connector to Analog Monitor 2
3. Connect the Unbalanced Audio OUTPUT mini plug connectors to up to 2 unbalanced audio acceptors[1], as follows:
   - Connect the OUT 1 connector to Tape Recorder 1
   - Connect the OUT 2 connector to Tape Recorder 2
4. Connect the Balanced Audio OUTPUT terminal block connectors to up to 2 balanced audio acceptors[1], as follows:
   - Connect the first terminal block connector to Power Amplifier 1
   - Connect the second terminal block connector to Power Amplifier 2
5. On the underside of the **VP-200NA**, set both the Hs and Vs switches to 75Ω (ANALOG).
6. Connect the 12V DC power adapter to the power socket and connect the adapter to the mains electricity.
7. Adjust[2] the right and left audio signal levels, if required (not illustrated in Figure 3[3]).

1 When only one output is required, use either of the outputs, and leave the other output unconnected

2 Insert a screwdriver into the small hole and carefully rotate it, trimming the OUTPUT level

3 See the illustration in Figure 2

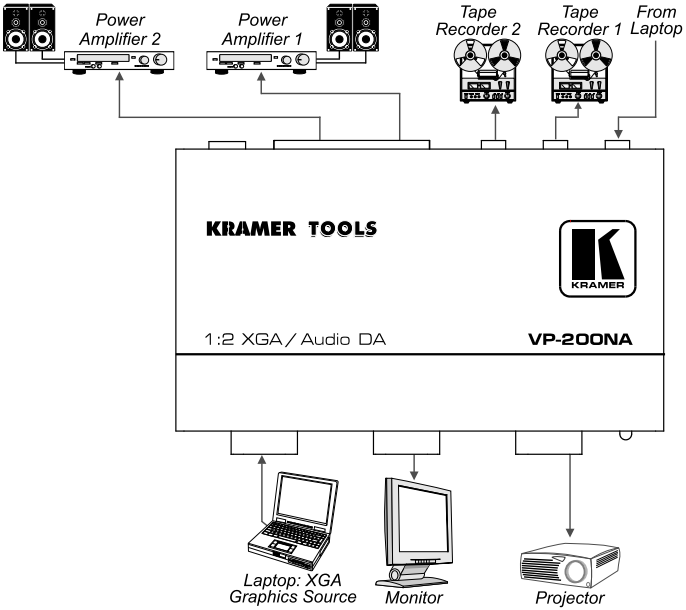


Figure 3: Connecting a Laptop to the VP-200NA 1:2 XGA / Audio DA

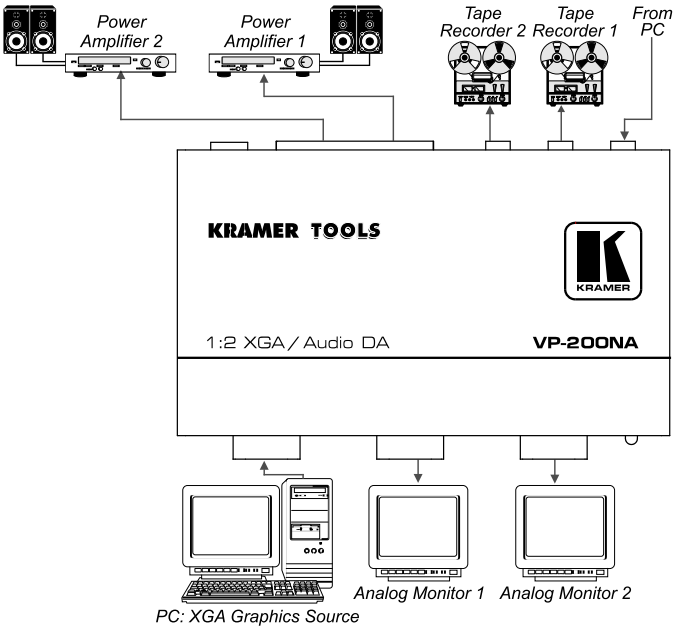


Figure 4: Connecting a PC to the VP-200NA 1:2 XGA / Audio DA

6 Technical Specifications

Table 3 includes the technical specifications:

Table 3: Technical Specifications[1] of the VP-200NA 1:2 XGA / Audio DA

INPUTS:	VIDEO: 1 analog red, green, blue signals - 0.7 Vpp/75Ω, H & V sync, TTL level, on an HD15F connector AUDIO: 1 unbalanced stereo audio on a mini plug connector	
OUTPUTS:	VIDEO: 2 analog red, green, blue signals - 0.7 Vpp/75Ω, H & V sync, TTL level, on HD15F connectors AUDIO: 2 unbalanced stereo audio on mini plug connectors; 2 balanced stereo audio on terminal block connectors	
MAX. OUTPUT LEVEL:	VIDEO: 2.0Vpp	AUDIO: 7.4Vpp
BANDWIDTH (-3dB):	VIDEO: 400MHz	AUDIO: >100kHz
DIFF. GAIN:	0.03%	
DIFF. PHASE:	0.03 Deg.	
K-FACTOR:	<0.05%	
S/N RATIO:	VIDEO: 73.2dB	AUDIO: 80.32dB (unweighted)
CONTROLS:	On the underside: pair of ANALOG/TTL switches for Hs (Horizontal Sync) and Vs (Vertical Sync); ID Bit switch; Audio Level trimmers: -64.4dB to +6dB	
COUPLING:	VIDEO: DC	AUDIO: AC at input; DC at output
AUDIO THD + NOISE:	0.015%	
AUDIO 2nd HARMONIC:	0.002%	
POWER SOURCE:	12 VDC, 110mA	
DIMENSIONS:	12cm x 7.1cm x 2.3cm (4.7" x 2.78" x 0.9"), W, D, H	
WEIGHT:	0.3 kg. (0.67 lbs.) approx.	
ACCESSORIES:	Power supply, mounting bracket	

1 Specifications are subject to change without notice

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the web site www.kramerelectronics.com.
2. Any product, on which the serial number has been defaced, modified or removed.
3. Damage, deterioration or malfunction resulting from:
   - i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   - ii) Product modification, or failure to follow instructions supplied with the product
   - iii) Repair or attempted repair by anyone not authorized by Kramer
   - iv) Any shipment of the product (claims must be presented to the carrier)
   - v) Removal or installation of the product
   - vi) Any other cause, which does not relate to a product defect
   - vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.
2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.
3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.
2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).
3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:
2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.
NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.
This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC); generic emission standard. Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard. Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC Rules and Regulations: Part 15: "Radio frequency devices Subpart B – Unintentional radiators"

CAUTION!

- Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.
- Use the supplied DC power supply to feed power to the machine.
- Please use recommended interconnection cables to connect the machine to other components.

For the latest information on our products and a list of Kramer distributors, visit our Web site: www.kramerelectronics.com, where updates to this user manual may be found.
We welcome your questions, comments and feedback.

Safety Warning:
Disconnect the unit from the power supply before opening/servicing.

Kramer Electronics, Ltd.
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P/N: 2900-000200 REV 2